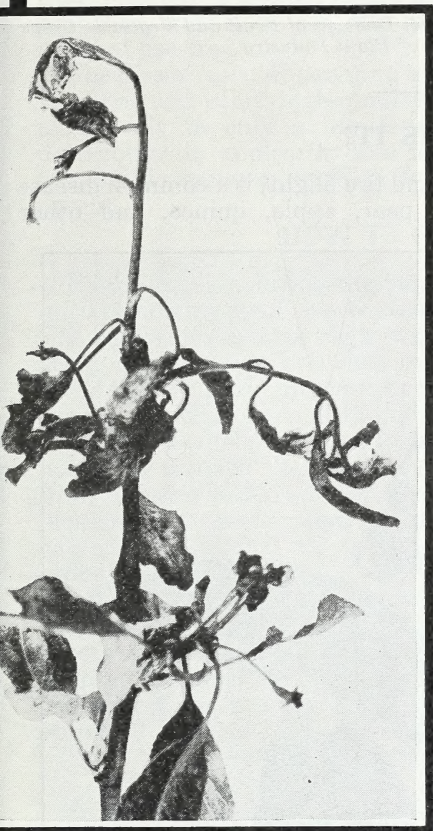


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BLIGHT OF PEARS APPLES AND QUINCES

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BLIGHT OF PEARS, APPLES, AND QUINCES

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WHAT IS IT?

Blight, also known as pear blight and fire blight, is a common disease of bacterial origin, attacking the pear, apple, quince, and other



FIGURE 1.—Blight of pear twig.

pomaceous trees and shrubs. It attacks (1) the blossoms and often the young fruits (fig. 1), causing them to blacken and die; (2) the tender tips of twigs and water sprouts, often killing them back for a foot or more and causing their leaves to turn black but not fall (title-page illustration and fig. 1); and (3) spurs, large branches, trunks, collars (base of tree), and even roots, chiefly by extension of the disease

from infected blossoms, twigs, and water sprouts. Invasion of large branches, trunks, collars, and roots may result in the death of a part or all of the tree.

The disease is so destructive to the Clapp Favorite, Flemish Beauty, Bartlett, and other high-quality pears that these varieties are grown extensively in only a few favored localities. Although frequently destructive to apples, it does not prevent the profitable growing of susceptible varieties, such as Jonathan, Wealthy, and Yellow Transparent.

HOW IT OVERWINTERS

Blight appears during the blossoming season and is generally active until rapid growth of the tree ceases, usually about a month thereafter. The bacterium causing blight winters over, chiefly in the areas of thick, fleshy bark on large branches and trunks, and even roots, which it has invaded during the previous year. Occasionally it may also live over winter in twigs or small branches if conditions are such that the infected places do not dry up during the summer. From these so-called hold-over cankers the bacteria are carried to the open blossoms, and from blossom to blossom and from tree to tree by insects visiting the blossoms for nectar and pollen. From the diseased blossoms the bacteria are carried to the twigs and water sprouts by insects and probably to some extent by rain. Usually with the coming of summer, the hardening of tissues and the occurrence of hot, dry weather prevent new infections, and the old ones die out, except those so favorably situated that drying out is prevented. These are chiefly deep-seated infections in the thick bark of the larger branches, trunks, and collars and in the roots; they are the hold-over cankers mentioned above.

CONTROL

In control the most important measure is the removal of the hold-over blight. During the late summer the trees should be gone over at least once and all blighted twigs cut out, the cut being made through healthy wood well below the blighted part. Special care should be taken to detect and cut out blighted areas on large limbs, trunks, and collars, the cuts being run into healthy tissues and down into the roots, if necessary. The trees should be reinspected in the fall or winter after the leaves are off, and all hold-over areas that were previously missed should be removed. Another inspection in early spring is desirable. After every cutting operation the cut surfaces and tools should be sterilized with corrosive sublimate, 1 part to 1,000 parts of water, or with Reimer's solution, consisting of 1 ounce of corrosive sublimate and 1 ounce of mercuric cyanide in 4 gallons of water. Both of these chemicals can be obtained at drug stores. Corrosive sublimate is sold in tablet form with directions for making up a 1-to-1,000 solution. These chemicals are deadly poisons and should be treated as such. Since these solutions will corrode metals they should be kept in glass or wooden containers, and all tools should be carefully cleaned after use. The solutions should be applied with a sponge or a piece of cloth.

Removing blighted blossoms and twigs as they appear in the spring is usually impracticable, except when only a few trees are affected. Even then, unless great care is taken to cut well below the

infected areas and to sterilize the tools between cuts, this practice may result in new infections. Unless the trunk and main limbs are threatened, it is better to postpone cutting until late summer or fall, when blight is no longer active.

Where only a few blossoms and tips of branches are affected, as is so often the case with apple trees, little damage is done, but the dead parts should be removed before the next growing season, not only because they are unsightly but because they often harbor other organisms that cause disease.

The wounds and cuts larger than 2 inches in diameter may be painted with a good white-lead paint, with a prepared tree paint, or with a coal-tar-creosote paint, which may be made at home by thinning ordinary commercial coal tar with creosote oil until it has the consistency of a thick paint. Usually this requires about 1 part of creosote oil to 3 parts of coal tar. This paint disinfects and protects the wound or cut, but care should be taken not to cover live bark with it. Although removing hold-over blight is the most important control measure, it will not protect the trees of an individual orchard from becoming infected through the medium of hold-over cankers in adjoining orchards. Old and usually worthless pear trees are often sources of infection for near-by apple orchards because of numerous hold-over cankers.

A chemical solution containing zinc chloride, which penetrates the tissues and kills the bacteria, has been successfully used in some States as a substitute for canker removal. Chemical treatment is a rapid method of eliminating infected tissues, but it requires great skill and care. For specific directions growers should consult county agents or State experiment stations.

In recent years a weak bordeaux mixture composed of 1 pound of copper sulfate, 3 pounds of hydrated lime, and 50 gallons of water, applied as a spray at least once during the blossoming season, has been widely tested as a supplement to the "cutting-out" control measure. Although this spray has not always proved useful and is apt to cause injury that later may develop into fruit russetting, it is worthy of trial on trees that in previous years have been so subject to blight that they have not been profitable. If a single application is made, it should be made when 75 to 80 percent of the blossoms are open; if two applications are made, the first should be made when 25 to 35 percent of the blossoms are open, and the second as above. These applications will also aid in the control of scab. No arsenate of lead should be used in either application, because of the danger to bees. The sprays usually applied for the control of sucking insects, such as aphids, are useful in cutting down the number of insect carriers of blight.

Trees of susceptible varieties are less likely to be seriously injured if not stimulated to rapid succulent growth by heavy fertilization and heavy pruning.

Since the practical methods of control will vary somewhat in different parts of the country, growers should consult their county agents or experiment stations for methods applicable to their localities.

